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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,810	08/05/2002	Lutz Brandt	FA-1068	3040

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EXAMINER	
TSOY, ELENA	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application No.	Applicant(s)	
	10/089,810	BRANDT ET AL.	
	Examiner	Art Unit	
	Elena Tsoy	1762	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 27 December 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1.☒ A Notice of Appeal was filed on *27 December 2004*. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2.☐ The proposed amendment(s) will not be entered because:

(a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);

(b) ☐ they raise the issue of new matter (see Note below);

(c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

(d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____.

3.☐ Applicant's reply has overcome the following rejection(s): _____.

4.☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5.☐ The a)☐ affidavit, b)☐ exhibit, or c)☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.

6.☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7.☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: *10-24*.

Claim(s) withdrawn from consideration: _____.

8.☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9.☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10.☐ Other: _____

Advisory Action

1. The amendment filed on December 27, 2004 under 37 CFR 1.116 in reply to the final rejection has been entered and considered but is not deemed to place the application in condition for allowance for the reasons of record as set forth in the Final Office Action mailed on August 2, 2004. Claims 10-24 are pending in the application.

Response to Arguments

2. Applicants' arguments filed December 27, 2004 have been fully considered but they are not persuasive.

(A) Applicants argue that in contrast to cited references, the amended claims now expressly require that the aliphatic urethane (methlacrylate is formed by reacting an isocyanate compound selected from the group consisting of acyclic aliphatic diisocyanates having 8 C atoms, polyisocyanates based on an acyclic aliphatic diisocyanate having 8 C atoms, and combinations thereof, with at least one low-molecular aliphatic compound having at least one hydroxy group and at least one (methlacryloyl group, and optionally with at least one low-molecular aliphatic hydroxy reactant selected from the group consisting of diols and polyols. Claims 10 and 13 further require that at least one nolvisocvanate. or at least one polvol, or at least one polvisocvanate and at least one polvol, are reacted in said forming of the aliphatic urethane (methlacœlate. Thus, the reactants used in making the aliphatic urethane (methlacrylate must include: a polyisocyanate based on acyclic aliphatic diisocyanate having 8 carbon atoms; or a polyol, or a combination of a polyol and polyisocyanate based on an acyclic aliphatic diisocyayate having 8 carbon atoms.

The Examiner respectfully disagrees with this argument. Betz et al teach that are well known in the art and can be made by *reacting* **di or polyisocyanates** with a chain extender from the group of the diols/*polyols* and subsequently reacting the remaining free isocyanate groups with at least one *hydroxyalkyl (meth)acrylate* or hydroxyalkyl ester of other ethylenically unsaturated carboxylic acids (See column 7, lines 14-23). It is also possible to prepare the urethane acrylates by first reacting some of the isocyanate groups of a di- or polyisocyanate of at least one hydroxyalkyl ester and then reacting the remaining isocyanate groups with a chain extender. All of the forms lying between these two processes are of course also possible. For example, some of the isocyanate groups of a diisocyanate can be reacted first of all with a diol, then a further portion of the isocyanate groups can be reacted with the hydroxyalkyl ester, and, subsequently, the remaining isocyanate groups can be reacted with a diamine. Betz et al teach that **these various preparation processes** for the polyurethane acrylates **are known (cf. e.g. EP-A-204 161)** and therefore do not require any more detailed description (See column 7, lines 52-54).

Bishop et al (which corresponds to EP 204161) teach that any organic diisocyanate can be used to form the acrylate-terminated oligomers, such as a **diisocyanate** in which a linear aliphatic chain containing **at least 6 carbon atoms** separates the two isocyanate groups (i.e. including an acyclic aliphatic diisocyanate having 8 C atoms) (See column 3, lines 65+). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a process described by Bishop et al with the use of a diisocyanate in which a linear aliphatic chain containing at least 6 carbon atoms separates the two isocyanate groups (i.e. including an acyclic aliphatic diisocyanate having 8 C atoms) for making urethane

(meth)acrylates of Betz et al since Betz et al teach that polyurethane acrylates can be made by a process described in Bishop et al (which corresponds to EP 204161).

(B) Applicants argue that neither Betz, nor the disclosures of Bishop relied upon by Betz, disclose or suggest any aliphatic urethane (methlacrylate having an average methlacryloyl functionality of 3 to 4.5 and a calculated molecular mass of at least 826, or any process parameters for forming any aliphatic urethane (methlacrylate having the recited characteristics.

The Examiner respectfully disagrees with this argument. Betz teaches that examples of binders employed in the radiation-curable coating composition are binders having **(meth)acryloyl** functionalities (See column 5, lines 58-67), preferably urethane (meth)acrylates and/or polyester (meth)acrylates, the use of aliphatic urethane acrylates being particularly preferred (See column 6, lines 2-4). The polymers or oligomers employed as binders normally have a number-average molecular weight of from 500 to 50,000, preferably from **1000 to 5000** (See column 6, lines 12-15). The polymers and/or oligomers employed in the coating compositions of the invention preferably have at least 2 and, with particular preference, **from 3 to 6 double bonds** per molecule (See column 6, lines 15-18). The binders used preferably also have a **double bond equivalent weight of from 400 to 2000**, with particular preference from 500 to 900 (See column 6, lines 18-20). Therefore, Betz expressly teaches urethane (meth)acrylates having from 3 to 6 double bonds per molecule and having a number-average molecular weight of from 500 to 50,000, preferably from 1000 to 5000.

(C) Applicants argue that although, as the Examiner has pointed out, Bishop states broadly and without support that "any organic diisocyanate can be used to form the acrylate-

terminated oligomers", Applicants submit that the exemplary diisocyanates listed by Bishop would not provide the functionality required by the present claims, and that there is no motivation provided by Bishop to use only components that would provide a functionality of 3 to 4.5, in order to obtain transparent finishing coats having the desirable properties of the coatings of the present invention, namely flexibility and scratch resistance.

However, Betz teaches that **various preparation processes** for the polyurethane acrylates having from 3 to 6 double bonds per molecule and having a number-average molecular weight of from 500 to 50,000, preferably from 1000 to 5000, which processes comprise *reacting* **di or polyisocyanates** with *polyols* and with at least one *hydroxyalkyl (meth)acrylate* **are known (cf. e.g. EP-A-204 161)**. Bishop et al (which corresponds to EP 204161) teach that any organic diisocyanate, including a **diisocyanate** in which a linear aliphatic chain containing **at least 6 carbon atoms** separates the two isocyanate groups (i.e. including an acyclic aliphatic diisocyanate having 8 C atoms) can be used to form the acrylate-terminated oligomers (See column 3, lines 65+). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a process described by Bishop et al with the use of a diisocyanate in which a linear aliphatic chain containing at least 6 carbon atoms separates the two isocyanate groups (i.e. including an acyclic aliphatic diisocyanate having 8 C atoms) for making urethane (meth)acrylates of Betz et al having from 3 to 6 double bonds per molecule and having a number-average molecular weight of from 500 to 50,000, preferably from 1000 to 5000 since Betz et al teach that polyurethane acrylates can be made by a process described in Bishop et al (which corresponds to EP 204161).

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (571) 272-1429. The examiner can normally be reached on Mo-Thur. 9:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ELENA TSOY
PRIMARY EXAMINER

Elena Tsoy
Examiner
Art Unit 1762

January 10, 2005